

## ABSTRACT OF THE DISCLOSURE

A measurement device and method are provided for OES measurements in air. An arc electrode (201, 501) has a certain thickness and a pointed end having a certain grinding angle. Holding means (202, 502) hold the arc electrode (201, 501) at a certain distance from the material to be measured. A voltage and current supply (203) generates and maintains a voltage between the arc electrode and the material to be measured and supplies current through the arc. Focusing and detection optics (205, 206, 402, 403, 404, 405, 406, 407, 408, 505, 506, 509, 604) collect and detect optical radiation. The thickness of the arc electrode (201, 501) is between 3 and 10 mm and the grinding angle is between 50 and 130 degrees. The arc distance is between 0.5 and 3 mm. An ignition spark voltage is between 5 and 20 kV, an arc voltage between 20 and 160 V and an arc current between 1 and 10 A. The focusing and detection optics (205, 206, 402, 403, 404, 405, 406, 407, 408, 505, 506, 509, 604) collect and detect at least optical radiation on a wavelength of 193 nm.